

(a) At least 90 percent full when placed or buried in the landfill; or (6/95)

(b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before placement or burial in the landfill. (6/95).

264.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs)

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

(a) Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

(b) The inside containers must be overpacked in an open head DOT specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with 264.314(e), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed

with inside containers and sorbent material. (12/93)

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with 264.17(b). (12/93)

(d) Incompatible wastes, as defined in R.61-79.260.10, must not be placed in the same outside container.

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in R.61-79.261.23(a)(5), must be treated or rendered nonreactive prior to packaging in accordance with paragraphs (a) through (d) of this section. Cyanide- and sulfide-bearing reactive waste may be packed in accordance with paragraphs (a) through (d) of this section without first being treated or rendered nonreactive.

(f) Such disposal is in compliance with the requirements of part 268. Persons who incinerate lab packs according to the requirements in 268.42(c)(1) may use fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in paragraph (b) of this section. (12/92)

264.317 Special requirements for hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 must not be placed in a landfill unless

the owner or operator operates the landfill in accord with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are: (12/93)

(1) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere;

(2) The attenuative properties of underlying and surrounding soils or other materials;

(3) The mobilizing properties of other materials co-disposed with these wastes; and

(4) The effectiveness of additional treatment, design, or monitoring requirements.

(b) The Department may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 in order to reduce the possibility of migration of these wastes to groundwater, surface water, or air so as to protect human health and the environment.

Subpart O - Incinerators

264.340 Applicability

(a) The regulations of this subpart apply to owners and operators of facilities that incinerate hazardous waste (as defined in 260.10), except as 264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste: (12/93)

(1) Owners or operators of hazardous waste incinerators (as defined in R.61-79.260.10); and

(2) Owners or operators who burn hazardous waste in boilers or in industrial furnaces in order to destroy them, or who burn hazardous waste in boilers or in industrial furnaces for any recycling purpose and elect to be regulated under this regulation.

(b) Integration of the MACT standards. (9/01, 6/03)

(1) Except as provided by paragraphs (b)(2), (b)(3), and (b)(4), the standards of this part no longer apply when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Department a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(b) documenting compliance with the requirements of 40 CFR part 63, Subpart EEE,. Nevertheless, even after this demonstration of compliance with the MACT standards, RCRA permit conditions that were based on the standards of this part will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise. (6/03)

(2) The MACT standards do not replace the closure requirements of 264.351 or the applicable

requirements of subparts A through H, BB and CC of this part.

(3) 264.343(c) remains in effect for incinerators that elect to comply with the alternative standard. (7/02)

(4) The following requirements remain in effect for startup, shutdown and malfunction events if you elect to comply with 270.235(a)(1)(i) to minimize emissions of toxic compounds from these events; (6/03)

(i) 264.345(a) requiring that an incinerator operate in accordance with operating requirements as specified in the permit; and

(ii) 264.345(c) requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.

(c) After consideration of the waste analysis included with Part B of the permit application, the Department, upon demonstration by the owner or operator, must exempt the applicant from all requirements of this subpart except 264.341 (Waste Analysis) and 264.351 (Closure), (12/93, moved from (b), 6/03)

(1) If the Department finds that the waste to be burned is:

(i) Listed as a hazardous waste in part 261, Subpart D, solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(ii) Listed as a hazardous waste in part 261, Subpart D, solely because it is reactive (Hazard Code R) for characteristics other than those listed in 261.23(a)(4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(iii) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under part 261, Subpart C; or

(iv) A hazardous waste solely because it possesses any of the reactivity characteristics described by 261.23(a)(1), (2), (3), (6), (7), and (8), and will not be burned when other hazardous wastes are present in the combustion zone; and

(2) If the waste analysis shows that the waste contains none of the hazardous constituents listed in part 261, Appendix VIII, which would reasonably be expected to be in the waste.

(d) If the waste to be burned is one which is described by paragraphs (b)(1)(i), (ii), (iii), or (iv) of this section and contains insignificant concentrations of the hazardous constituents listed in 261, Appendix VIII, then the Department may, in establishing permit conditions, exempt the applicant from all requirements of this subpart, except 264.341 (Waste Analysis) and 264.351 (Closure), after consideration of the waste analysis included with Part B of the permit application, unless the Department finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

(e) The owner or operator of an incinerator may conduct trial burns subject only to the requirements of 270.62 (Short term and incinerator permits).

264.341 Waste analysis

(a) As a portion of the trial burn plan required by R.61-79.270.62, or with Part B of the permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by R.61-79.270.19 or 270.62(b). Owners or operators of new hazardous waste incinerators must provide the information required by 270.62(c) or 270.19 270.62 to the greatest extent possible. (12/93)

(b) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit application (under 264.345(b)). (12/93)

264.342 Principal organic hazardous constituents (POHCs)

(a) Principal Organic Hazardous Constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of 264.343.

(b) (1) One or more POHCs will be specified in the owner's or operator's facility's permit application, from among those constituents listed in R.61-79.261, Appendix VIII, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste. (11/90; 12/93)

(2) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in R.61-79.270.62 for obtaining trial burn permits. (12/93)

264.343 Performance standards

An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under 264.345, it will meet the following performance standards: (11/90)

(a) (1) Except as provided in paragraph (a)(2) of this section, an incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under 264.342) in its permit application for each waste feed. DRE is determined for each POHC from the following equation:

264.344 Hazardous waste incinerator permits under these regulations

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \times 100\%$$

where:

W_{in} = mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator

and

W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

(2) An incinerator burning hazardous wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated (under 264.342) in its permit application. This performance must be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in 264.343(a)(1). In addition, the owner or operator of the incinerator must notify the Department of his intent to incinerate hazardous wastes F020, F021, F022, F023, F026, or F027.

(b) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

(c) An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula: $P_c = P_m \times \frac{14}{21 - Y}$

Where P_c is the corrected concentration of particulate matter, P_m is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas presented in 40 CFR part 60, Appendix A (Method 3). This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these an appropriate correction procedure, to be specified in the facility permit application. (12/93)

(d) For purposes of permit enforcement, compliance with the operating requirements specified in the permit application (under 264.345) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation, or reissuance of a permit under R.61-79.270.41. (12/93)

(a) The owner or operator of a hazardous waste incinerator may burn only wastes specified in his permit application and only under operating conditions specified in his permit application for those wastes under 264.345, except:

(1) In approved trial burns under R.61-79.270.62;

or

(2) Under exemptions created by 264.340.

(b) Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable.

Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under R.61-79.270.19. (12/93)

(c) The permit application for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this subpart, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of 264.345, sufficient to comply with the following standards: (12/93)

(1) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in paragraph (c)(2) of this section, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of 264.343, based on the Department's engineering judgment. The Department may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant. (11/90)

(2) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of 264.343 and must be in accordance with the approved trial burn plan; (11/90)

(3) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Department, the operating requirements must be those most likely to ensure compliance with the performance standards of 264.343, based on the Department's engineering judgment. (11/90; 12/93)

(4) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in R.61-79.270.19(c) as sufficient to ensure compliance with the performance standards of 264.343. (11/90)

264.345 Operating requirements (11/90)

(a) An incinerator must be operated in accordance with operating requirements specified in its permit application and as specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in 264.344(b) and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of 264.343. (11/90; 12/93)

(b) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of 264.343) to which the operating requirements apply. For each such waste feed, the permit application will specify acceptable operating limits including the following conditions: (11/90; 12/93)

- (1) Carbon monoxide (CO) level in the stack exhaust gas;
- (2) Waste feed rate;
- (3) Combustion temperature;
- (4) An appropriate indicator of combustion gas velocity;
- (5) Allowable variations in incinerator system design or operating procedures; and
- (6) Such other operating requirements as are necessary to ensure that the performance standards of 264.343 are met.

(c) During startup and shutdown of an incinerator, hazardous waste (except wastes exempted in accordance with 264.340) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit application. (11/90)

(d) Fugitive emissions from the combustion zone must be controlled by:

- (1) Keeping the combustion zone totally sealed against fugitive emissions; or
- (2) Maintaining a combustion zone pressure lower than atmospheric pressure; or
- (3) An alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(e) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under paragraph (a) of this section.

(f) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit application.

264.346 [Reserved]

264.347 Monitoring and inspections

(a) The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste:

(1) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit under these regulations must be monitored on a continuous basis. (11/90, 12/92)

(2) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

(3) Upon request by the Department, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit application achieve the performance standards of 264.343. (11/90; 12/93)

(b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.

(c) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Department that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.

(d) This monitoring and inspection data must be recorded and the records must be placed in the operating log required by 264.73 of this regulation.

264.348 - 264.350 [Reserved]

264.351 Closure

At closure the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.

[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with 261.3(d), that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of parts 262 through 266.] (12/92)

Subpart P - R [Reserved]

Subpart S - Special Provisions for Cleanup

264.550 Applicability of Corrective Action Management Unit (CAMU) Regulations. (6/03)

(a) Except as provided in paragraph (b) of this section, CAMUs are subject to the requirements of 264.552.

(b) CAMUs that were approved before April 22, 2002, or for which substantially complete applications

(or equivalents) were submitted to the Agency on or before November 20, 2000, are subject to the requirements in 264.551 for grandfathered CAMUs; CAMU waste, activities, and design will not be subject to the standards in 264.552, so long as the waste, activities, and design remain within the general scope of the CAMU as approved.

264.551 Grandfathered Corrective Action Management Units (CAMUs) (6/03)

(a) To implement remedies under 264.101 or RCRA Section 3008(h), or to implement remedies at a permitted facility that is not subject to 264.101, the owner or operator may designate an area at the facility as a corrective action management unit under the requirements of this section. Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. This request is subject to approval by the Department. One or more CAMUs may be designated at a facility. (8/00)

(b) (1) The owner or operator may request to designate a regulated unit (as defined in 264.90(a)(2)) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

(i) The regulated unit is closed or closing, meaning it has begun the closure process under 264.113 or 265.113; and

(ii) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(2) The subpart F, G, and H requirements and the unit-specific requirements of part 264 or 265 that applied to that regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(c) The owner or operator shall designate a CAMU in accordance with the following:

(1) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

(2) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

(3) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;

(4) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

264.552 Corrective Action Management Units (CAMU) (6/03).

(5) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

(6) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and

(7) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(d) The owner/operator shall provide sufficient information to enable the Department to designate a CAMU in accordance with the criteria in 264.552.

(e) The Department shall specify, in the permit, requirements for CAMUs to include the following: The owner or operator shall specify in the permit application the following information for each CAMU:

264.552 Corrective Action Management Units (CAMU) (6/03).

(a) To implement remedies under 264.101 or RCRA Section 3008(h), or to implement remedies at a permitted facility that is not subject to 264.101, the Department may designate an area at the facility as a corrective action management unit under the requirements in this section. Corrective action management unit means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(1) CAMU-eligible waste means:

(i) All solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup. As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes.

(ii) Wastes that would otherwise meet the description in paragraph (a)(1)(i) are not "CAMU-Eligible Wastes" where:

(A) The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units found above ground, unless the wastes are first placed in the tanks, containers or non-land-based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup; or

(B) The Department exercises the discretion in paragraph (a)(2) to prohibit the wastes from management in a CAMU.

(iii) Notwithstanding paragraph (a)(1)(i), where appropriate, as-generated non-hazardous waste

may be placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.

(2) The Department may prohibit, where appropriate, the placement of waste in a CAMU where the Department has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of part 268, or applicable unit design requirements, or applicable unit design requirements of part 265, or that non-compliance with other applicable requirements likely contributed to the release of the waste.

(3) Prohibition against placing liquids in CAMUs.

(i) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

(ii) The requirements in 264.314(d) for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

(iii) The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to 264.314(f).

(iv) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with 264.314(c). Sorbents used to treat free liquids in CAMUs must meet the requirements of 264.314(e).

(4) Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(5) Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(b) (1) The Department may designate a regulated unit (as defined in 264.90(a)(2)) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

(i) The regulated unit is closed or closing, meaning it has begun the closure process under 264.113 or 265.113; and

(ii) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(2) The Subpart F, G, and H requirements and the unit-specific requirements 264 or part 265 that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(c) The Department shall designate a CAMU that will be used for storage and/or treatment only in accordance with paragraph (f). The Department shall

264.552 Corrective Action Management Units (CAMU) (6/03). designate all other CAMUs in accordance with the following:

(1) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

(2) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

(3) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility;

(4) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

(5) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

(6) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and

(7) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(d) The owner/operator shall provide sufficient information to enable the Department to designate a CAMU in accordance with the criteria in this section. This must include, unless not reasonably available, information on:

(1) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release);

(2) Whether the waste was listed or identified as hazardous at the time of disposal and/or release; and

(3) Whether the disposal and/or release of the waste occurred before or after the land disposal requirements of part 268 were in effect for the waste listing or characteristic.

(e) The Department shall specify, in the permit, requirements for CAMUs to include the following:

(1) The areal configuration of the CAMU.

(2) Except as provided in paragraph (g), requirements for CAMU-eligible waste management to include the specification of applicable design, operation, treatment and closure requirements.

(3) Minimum design requirements. CAMUs, except as provided in paragraph (f), into which wastes are placed must be designed in accordance with the following:

(i) Unless the Department approves alternate requirements under (e)(3)(ii), CAMUs that consist of

new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. For purposes, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component;

(ii) Alternate requirements. The Department may approve alternate requirements if:

(A) The Department finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in (e)(3)(i); or

(B) The CAMU is to be established in an area with existing significant levels of contamination, and the Department finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.

(4) Minimum treatment requirements: Unless the wastes will be placed in a CAMU for storage and/or treatment only in accordance with (f), CAMU-eligible wastes that, absent this section, would be subject to the treatment requirements of part 268, and that the Department determines contain principal hazardous constituents must be treated to the standards specified in (e)(4)(iii) of this section.

(i) Principal hazardous constituents are those constituents that the Department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(A) In general, the Department will designate as principal hazardous constituents:

(1) Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3} ; and

(2) Non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

(B) The Department will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to ground water are substantially higher than cleanup levels or goals at the site; when making such a designation, the Department may consider such factors as constituent concentrations, and fate and transport characteristics under site conditions.

(C) The Department may also designate other constituents as principal hazardous constituents that the Department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(ii) In determining which constituents are "principal hazardous constituents," the Department must consider all constituents which, absent this section, would be subject to the treatment requirements in part 268.

(iii) Waste that the Department determines contains principal hazardous constituents must meet treatment standards determined in accordance with (e)(4)(iv) or (e)(4)(v):

(iv) Treatment standards for wastes placed in CAMUs.

(A) For non-metals, treatment must achieve 90 percent reduction in total principal hazardous constituent concentrations, except as provided by (e)(4)(iv)(C).

(B) For metals, treatment must achieve 90 percent reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by (e)(4)(iv)(C) of this section.

(C) When treatment of any principal hazardous constituent to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the Universal Treatment Standard is not required. Universal Treatment Standards are identified in 268.48 Table UTS.

(D) For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must also be treated to eliminate these characteristics.

(E) For debris, the debris must be treated in accordance with 268.45, or by methods or to levels established under s (e)(4)(iv)(A) through (D) or (e)(4)(v), whichever the Department determines is appropriate.

(F) Alternatives to TCLP. For metal bearing wastes for which metals removal treatment is not used, the Department may specify a leaching test other than the TCLP (SW846 Method 1311, 260.11(11)) to measure treatment effectiveness, provided the Department determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.

(v) Adjusted standards. The Department may adjust the treatment level or method in (e)(4)(iv) to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or

method must be protective of human health and the environment:

(A) The technical impracticability of treatment to the levels or by the methods in (e)(4)(iv);

(B) The levels or methods in (e)(4)(iv) would result in concentrations of principal hazardous constituents (PHCs) that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under state or federal law);

(C) The views of the affected local community on the treatment levels or methods in (e)(4)(iv) as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;

(D) The short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in (e)(4)(iv);

(E) The long-term protection offered by the engineering design of the CAMU and related engineering controls:

(1) Where the treatment standards in (e)(4)(iv) are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility; or

(2) Where cost-effective treatment has been used and the CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at 264.301(c) and (d); or

(3) Where, after review of appropriate treatment technologies, the Department determines that cost-effective treatment is not reasonably available, and the CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at 264.301(c) and (d); or

(4) Where cost-effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility; or

(5) Where, after review of appropriate treatment technologies, the Department determines that cost-effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in (e)(3)(i) and (ii), or the CAMU provides substantially equivalent or greater protection.

(vi) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the CAMU.

(vii) For the purpose of determining whether wastes placed in CAMUs have met site-specific treatment standards, the Department may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of

264.552 Corrective Action Management Units (CAMU) (6/03). treatment and analysis of constituents with similar treatment properties.

(5) Except as provided in (f), requirements for ground water monitoring and corrective action that are sufficient to:

(i) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU; and

(ii) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU; and

(iii) Require notification to the Department and corrective action as necessary to protect human health and the environment for releases to ground water from the CAMU.

(6) Except as provided in (d), closure and post-closure requirements:

(i) Closure of corrective action management units shall:

(A) Minimize the need for further maintenance; and

(B) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(ii) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Department for a given CAMU:

(A) Requirements for excavation, removal, treatment or containment of wastes; and

(B) Requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU.

(iii) In establishing specific closure requirements for CAMUs under (e), the Department shall consider the following factors:

(A) CAMU characteristics;

(B) Volume of wastes which remain in place after closure;

(C) Potential for releases from the CAMU;

(D) Physical and chemical characteristics of the waste;

(E) Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

(F) Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

(iv) Cap requirements:

(A) At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria, except as provided in (e)(6)(iv)(B):

- (1) Provide long-term minimization of migration of liquids through the closed unit;
- (2) Function with minimum maintenance;
- (3) Promote drainage and minimize erosion or abrasion of the cover;
- (4) Accommodate settling and subsidence so that the cover's integrity is maintained; and
- (5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(B) The Department may determine that modifications to (e)(6)(iv)(A) are needed to facilitate treatment or the performance of the CAMU (e.g., to promote biodegradation).

(v) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

(f) CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all of the requirements, except as follows.

(1) CAMUs that are used for storage and/or treatment only and that operate in accordance with the time limits established in the staging pile regulations at 264.554(d)(1)(iii), (h), and (i) are subject to the requirements for staging piles at 264.554(d)(1)(i) and (ii), 264.554(d)(2), 264.554(e) and (f), and 264.554(j) and (k) in lieu of the performance standards and requirements for CAMUs in this section at (c) and (e)(3) through (6).

(2) CAMUs that are used for storage and/or treatment only and that do not operate in accordance with the time limits established in the staging pile regulations at 264.554(d)(1)(iii), (h), and (i):

(i) Must operate in accordance with a time limit, established by the Department, that is no longer than necessary to achieve a timely remedy selected for the waste, and

(ii) Are subject to the requirements for staging piles at 264.554(d)(1)(i) and (ii), 264.554(d)(2), 264.554(e) and (f), and 264.554(j) and (k) in lieu of the performance standards and requirements for CAMUs in this section at (c) and (e)(4) and (6).

(g) CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at (e)(3)(i), caps at (e)(6)(iv), ground water monitoring requirements at (e)(5) or, for treatment and/or storage-only CAMUs, the design standards at (f).

(h) The Department shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under (e)(4)(v) of this section to the treatment standards in (e)(4)(iv).

(i) Notwithstanding any other provision, the Department may impose additional requirements as necessary to protect human health and the environment.

(j) Incorporation of a CAMU into an existing permit must be approved by the Department according to the procedures for Department-initiated permit modifications under 270.41, or according to the permit modification procedures of 270.42.

(k) The designation of a CAMU does not change the Department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

264.553 Temporary Units (TU) (12/93)

(a) For temporary tanks and container storage areas used for treatment or storage of hazardous remediation wastes, during remedial activities required under 264.101 or RCRA section 3008(h), or at a permitted facility that is not subject to 264.101 the owner or operator may request approval by the Department to designate a unit at the facility as a temporary unit. A temporary unit must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the temporary unit originated. For temporary units, the Department may replace the design, operating, or closure standard applicable to these units under this part 264 or part 265 with alternative requirements which protect human health and the environment. (8/00)

(b) Any temporary unit to which alternative requirements are applied in accordance with paragraph (a) of this section shall be:

- (1) Located within the facility boundary; and
- (2) Used only for treatment or storage of remediation wastes.

(c) In establishing standards to be applied to a temporary unit, the Department shall consider the following factors:

- (1) Length of time such unit will be in operation;
- (2) Type of unit;
- (3) Volumes of wastes to be managed;
- (4) Physical and chemical characteristics of the wastes to be managed in the unit;
- (5) Potential for releases from the unit;

(6) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

(7) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

(d) The owner or operator shall specify in the permit application or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The shall also specify the design, operating, and closure requirements for the unit.

(e) The Department may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the permit or order, if the Department determines that:

(1) Continued operation of the unit will not pose a threat to human health and the environment; and

(2) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(f) Incorporation of a temporary unit or a time extension for a temporary unit into an existing permit shall be:

(1) Approved in accordance with the procedures for Department-initiated permit modifications under 270.41; or

(2) Requested by the owner/operator as a Class II modification according to the procedures under 270.42 of this chapter. (8/00)

(g) The owner or operator shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and the Department shall make such documentation available to the public.

264.554 Staging piles. (8/00)

This section is written in a special format to make it easier to understand the regulatory requirements. Like other regulations, this establishes enforceable legal requirements. For this "I" and "you" refer to the owner/operator.

(a) What is a staging pile? A staging pile is an accumulation of solid, non-flowing remediation waste (as defined in 260.10 of this chapter) that is not a containment building and is used only during remedial operations for temporary storage at a facility. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the Department in according to the requirements in this section.

(1) For the purposes of this section, storage includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment. (6/03)

(2) [Reserved 6/03]

(b) When may I use a staging pile? You may use a staging pile to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if you follow the standards and design criteria the Department has designated for that staging pile. The Department must designate the staging pile in a permit or, at an interim status facility, in a closure plan or order (consistent with 270.72(a)(5) and (b)(5) of this chapter). The Department must establish conditions in the permit, closure plan, or order that comply with paragraphs (d) through (k) of this section.

(c) What information must I provide to get a staging pile designated? When seeking a staging pile designation, you must provide:

(1) Sufficient and accurate information to enable the Department to impose standards and design criteria for your staging pile according to paragraphs (d) through (k) of this section;

(2) Certification by an independent, qualified, registered professional engineer for technical data, such as design drawings and specifications, and engineering studies, unless the Department determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment; and

(3) Any additional information the Department determines is necessary to protect human health and the environment.

(d) What performance criteria must a staging pile satisfy? The Department must establish the standards and design criteria for the staging pile in the permit, closure plan, or order.

(1) The standards and design criteria must comply with the following:

(i) The staging pile must facilitate a reliable, effective and protective remedy;

(ii) The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate); and

(iii) The staging pile must not operate for more than two years, except when the Department grants an operating term extension under paragraph (i) of this section (entitled "May I receive an operating extension for a staging pile?"). You must measure the two-year limit, or other operating term specified by the Department in the permit, closure plan, or order, from the first time you place remediation waste into a staging pile. You must maintain a record of the date when you first placed remediation waste into the staging pile for the life of the permit, closure plan, or order, or for three years, whichever is longer.

(2) In setting the standards and design criteria, the Department must consider the following factors:

(i) Length of time the pile will be in operation;

(ii) Volumes of wastes you intend to store in the pile;

(iii) Physical and chemical characteristics of the wastes to be stored in the unit;

(iv) Potential for releases from the unit;

(v) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and

(vi) Potential for human and environmental exposure to potential releases from the unit;

(e) May a staging pile receive ignitable or reactive remediation waste? You must not place ignitable or reactive remediation waste in a staging pile unless:

(1) You have treated, rendered or mixed the remediation waste before you placed it in the staging pile so that:

(i) The remediation waste no longer meets the definition of ignitable or reactive under 261.21 or 261.23 of this chapter; and

(ii) You have complied with 264.17(b); or

(2) You manage the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.

(f) How do I handle incompatible remediation wastes in a staging pile? The term "incompatible waste" is defined in 260.10 of this chapter. You must comply with the following requirements for incompatible wastes in staging piles:

(1) You must not place incompatible remediation wastes in the same staging pile unless you have complied with 264.17(b);

(2) If remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks or land disposal units (for example, surface impoundments), you must separate the incompatible materials, or protect them from one another by using a dike, berm, wall or other device; and

(3) You must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with 264.17(b).

(g) Are staging piles subject to Land Disposal Restrictions (LDR) and Minimum Technological Requirements (MTR)? No. Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements of RCRA 3004(o).

(h) How long may I operate a staging pile? The Department may allow a staging pile to operate for up to two years after hazardous remediation waste is first placed into the pile. You must use a staging pile no longer than the length of time designated by the Department in the permit, closure plan, or order (the

"operating term"), except as provided in paragraph (i) of this section.

(i) May I receive an operating extension for a staging pile?

(1) The Department may grant one operating term extension of up to 180 days beyond the operating term limit contained in the permit, closure plan, or order (see paragraph (l) of this section for modification procedures). To justify to the Department the need for an extension, you must provide sufficient and accurate information to enable the Department to determine that continued operation of the staging pile:

(i) Will not pose a threat to human health and the environment; and

(ii) Is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(2) The Department may, as a condition of the extension, specify further standards and design criteria in the permit, closure plan, or order, as necessary, to ensure protection of human health and the environment.

(j) What is the closure requirement for a staging pile located in a previously contaminated area?

(1) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in a previously contaminated area of the site by removing or decontaminating all:

(i) Remediation waste;

(ii) Contaminated containment system components; and

(iii) Structures and equipment contaminated with waste and leachate.

(2) You must also decontaminate contaminated subsoils in a manner and according to a schedule that the Department determines will protect human health and the environment.

(3) The Department must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.

(k) What is the closure requirement for a staging pile located in an uncontaminated area?

(1) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in an uncontaminated area of the site according to 264.258(a) and 264.111; or according to 265.258(a) and 265.111 of this chapter.

(2) The Department must include the above requirement in the permit, closure plan, or order in which the staging pile is designated.

(l) How may my existing permit (for example, RAP), closure plan, or order be modified to allow me to use a staging pile?

(1) To modify a permit, other than a RAP, to incorporate a staging pile or staging pile operating term extension, either:

(i) The Department must approve the modification under the procedures for Department-initiated permit modifications in 270.41 of this chapter; or

(ii) You must request a Class 2 modification under 270.42 of this chapter.

(2) To modify a RAP to incorporate a staging pile or staging pile operating term extension, you must comply with the RAP modification requirements under 270.170 and

(3) To modify a closure plan to incorporate a staging pile or staging pile operating term extension, you must follow the applicable requirements under 264.112(c) or 265.112(c) of this chapter.

(4) To modify an order to incorporate a staging pile or staging pile operating term extension, you must follow the terms of the order and the applicable provisions of 270.72(a)(5) or (b)(5) of this chapter.

(m) Is information about the staging pile available to the public? The Department must document the rationale for designating a staging pile or staging pile operating term extension and make this documentation available to the public.

264.555 Disposal of CAMU-eligible wastes in permitted hazardous waste landfills. (6/03)

(a) The Department with regulatory oversight at the location where the cleanup is taking place may approve placement of CAMU-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of RCRA part 268, if the conditions in (a)(1) through (3) are met:

(1) The waste meets the definition of CAMU-eligible waste in 264.552(a)(1) and (2).

(2) The Department with regulatory oversight at the location where the cleanup is taking place identifies principal hazardous constituents in such waste, in accordance with 264.552(e)(4)(i) and (ii), and requires that such principal hazardous constituents are treated to any of the following standards specified for CAMU-eligible wastes:

(i) The treatment standards under 264.552(e)(4)(iv); or

(ii) Treatment standards adjusted in accordance with 264.552(e)(4)(v)(A), (C), (D) or (E)(1); or

(iii) Treatment standards adjusted in accordance with 264.552(e)(4)(v)(E)(2), where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste, minimizing the short-term and long-term threat posed by the waste, including the threat at the remediation site.

(3) The landfill receiving the CAMU-eligible waste must have a RCRA hazardous waste permit, meet the requirements for new landfills in Subpart N, and be authorized to accept CAMU-eligible wastes; for the purposes of this requirement, "permit" does not include interim status.

(b) The person seeking approval shall provide sufficient information to enable the Department with

regulatory oversight at the location where the cleanup is taking place to approve placement of CAMU-eligible waste in accordance with (a). Information required by 264.552(d)(1) through (3) for CAMU applications must be provided, unless not reasonably available.

(c) The Department with regulatory oversight at the location where the cleanup is taking place shall provide public notice and a reasonable opportunity for public comment before approving CAMU eligible waste for placement in an off-site permitted hazardous waste landfill, consistent with the requirements for CAMU approval at 264.552(h). The approval must be specific to a single remediation.

(d) Applicable hazardous waste management requirements in this part, including recordkeeping requirements to demonstrate compliance with treatment standards approved under this section, for CAMU-eligible waste must be incorporated into the receiving facility permit through permit issuance or a permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding 270.4(a), a landfill may not receive hazardous CAMU-eligible waste under this section unless its permit specifically authorizes receipt of such waste.

(e) For each remediation, CAMU-eligible waste may not be placed in an off-site landfill authorized to receive CAMU-eligible waste in accordance with (d) until the following additional conditions have been met:

(1) The landfill owner/operator notifies the Department responsible for oversight of the landfill and persons on the facility mailing list, maintained in accordance with 124.10(c)(1)(ix), of his or her intent to receive CAMU-eligible waste in accordance with this section; the notice must identify the source of the remediation waste, the principal hazardous constituents in the waste, and treatment requirements.

(2) Persons on the facility mailing list may provide comments, including objections to the receipt of the CAMU-eligible waste, to the Department within 15 days of notification.

(3) The Department may object to the placement of the CAMU-eligible waste in the landfill within 30 days of notification; the Department may extend the review period an additional 30 days because of public concerns or insufficient information.

(4) CAMU-eligible wastes may not be placed in the landfill until the Department has notified the facility owner/operator that he or she does not object to its placement.

(5) If the Department objects to the placement or does not notify the facility owner/operator that he or she has chosen not to object, the facility may not receive the waste, notwithstanding 270.4(a), until the objection has been resolved, or the owner/operator obtains a permit modification in accordance with the procedures of 270.42 specifically authorizing receipt of the waste.

(6) As part of the permit issuance or permit modification process of (d), the Department may

modify, reduce, or eliminate the notification requirements of this as they apply to specific categories of CAMU-eligible waste, based on minimal risk.

(f) Generators of CAMU-eligible wastes sent off-site to a hazardous waste landfill under this section must comply with the requirements of 268.7(a)(4); off-site facilities treating CAMU-eligible wastes to comply with this section must comply with the requirements of 268.7(b)(4), except that the certification must be with respect to the treatment requirements of (a)(2) of this section.

(g) For the purposes of this section only, the "design of the CAMU" in 264.552(e)(4)(v)(E) means design of the permitted Subtitle C landfill.

Subpart T - V [Reserved]

Subpart W - Drip Pads (12/92)

264.570 Applicability

(a) The requirements of this subpart apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water runoff to an associated collection system. Existing drip pads are those constructed before December 6, 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads. The requirement at 264.573(b)(3) to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 except for those constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992. (12/93)

(b) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither runoff nor runoff is generated is not subject to regulation under 264.573(e) or 264.573(f), as appropriate.

(c) The requirements of this subpart are not applicable to the management of infrequent and incidental drippage in storage yards provided that: (12/93)

(1) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the owner or operator will do the following:

- (i) Clean up the drippage;
- (ii) Document the cleanup of the drippage;
- (iii) Retain the documents regarding cleanup for three years; and
- (iv) Manage the contaminated media in a manner consistent with State and Federal regulations.

264.571 Assessment of existing drip pad integrity

(a) For each existing drip pad as defined in 264.570 of this subpart, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of this subpart, except the requirements for liners and leak detection systems of 264.573(b). No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of 264.573 of this subpart are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of 264.573 of this subpart, except the standards for liners and leak detection systems, specified in 264.573(b) of this subpart. (12/93)

(b) The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of 264.573(b), and submit the plan to the Department no later than 2 years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of 264.573 of this subpart. The plan must be reviewed and certified by an independent qualified registered professional engineer. (12/93; 12/94, 9/98)

(c) Upon completion of all upgrades, repairs, and modifications, the owner or operator must submit to the Department the as-built drawings for the drip pad together with a certification by an independent qualified registered professional engineer attesting that the drip pad conforms to the drawings.

(d) If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of 264.573 (m) of this subpart or close the drip pad in accordance with 264.575.

264.572 Design and installation of new drip pads

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following: (12/93)

(a) all of the requirements of 264.573 (except 264.573(a)(4)), 264.574 and 264.575 of this subpart, or (12/93)

(b) all of the requirements of 264.573 (except 264.573(b)), 264.574 and 264.575 of this subpart. (12/93)

264.573 Design and operating requirements

(a) Drip pads must:

- (1) Be constructed of non earthen materials, excluding wood and non-structurally supported asphalt:

(2) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

(3) Have a curb or berm around the perimeter;

(4)(i) Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with 264.572(a) instead of 264.572(b). (12/93, 12/94, 9/98)

(ii) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this section, except for paragraph (b) of this Section. (12/93)

(5) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

Note: The Department will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) or the American Society of Testing and Materials (ASTM) in judging the structural integrity requirement of this paragraph.

(b) If an owner/operator elects to comply with 264.572(b) instead of 264.572(a), the drip pad must have: (12/93; 12/94, 9/01)

(1) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

(iii) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

(2) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:

(i) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad;

(ii) Designed and operated to function without clogging through the scheduled closure of the drip pad; and

(iii) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

(3) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log. (12/93)

(c) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See 264.573(m) for remedial action required if deterioration or leakage is detected.

(d) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent runoff.

(e) Unless protected by a structure, as described in 264.570(b), the owner or operator must design, construct, operate and maintain a runoff control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm,

unless the system has sufficient excess capacity to contain any runoff that might enter the system.

(f) Unless protected by a structure or cover as described in 264.570(b), the owner or operator must design, construct, operate and maintain a runoff management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(g) The drip pad must be evaluated to determine that it meets the requirements of paragraphs (a) through (f) of this section and the owner or operator must obtain a statement from an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of this section.

(h) Drillage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(i) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner/operator must determine if the residues are hazardous as per R.69-79.262.11 and, if so, must manage them under parts 261-268, 270, and section 3010 of RCRA. (12/93)

(j) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(k) After being removed from the treatment vessel, treated wood from pressure and nonpressure processes must be held on the drip pad until drillage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

(l) Collection and holding units associated with runoff and runoff control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) Throughout the active life of the drip pad and as specified in the permit, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

(1) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage in the leak detection system), the owner or operator must:

(i) Enter a record of the discovery in the facility operating log;

(ii) Immediately remove the portion of the drip pad affected by the condition from service;

(iii) Determine what steps must be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs;

(iv) Within 24 hours after discovery of the condition, notify the Department of the condition and, within 10 working days, provide written notice to the Department with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.

(2) The Department will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete and notify the owner or operator of the determination and the underlying rationale in writing.

(3) Upon completing all repairs and clean up, the owner or operator must notify the Department in writing and provide a certification signed by an independent, qualified registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with paragraph (m)(1)(iv) of this section.

(n) Should a permit under these regulations be necessary, the Department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(o) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drillage management practices, and a description of treated wood storage and handling practices.

264.574 Inspections

(a) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of 264.573 of this subpart by an independent qualified, registered professional engineer. This certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

(b) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(1) Deterioration, malfunctions or improper operation of runoff and runoff control systems;

(2) The presence of leakage in and proper functioning of leak detection system.

(3) Deterioration or cracking of the drip pad surface.

Note: See 264.573(m) for remedial action required if deterioration or leakage is detected.

264.575 Closure

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform postclosure care in accordance with closure and postclosure care requirements that apply to landfills (264.310). For permitted units, the requirement to have a permit continues throughout the postclosure period. In addition, for the purpose of closure, postclosure, and financial responsibility, such a drip pad is then considered to be landfill, and the owner or operator must meet all of the requirements for landfills specified in subparts G and H of this part.

(c) (1) The owner or operator of an existing drip pad, as defined in 264.570 of this subpart, that does not comply with the liner requirements of 264.573(b)(1) must:

(i) Include in the closure plan for the drip pad under 264.112 both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) Prepare a contingent postclosure plan under 264.118 of this part for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under 264.112 and 264.144 of this part for closure and postclosure care of a drip pad subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent postclosure plan, but are not required to include the cost of expected closure under paragraph (a) of this section.

Subpart X - Miscellaneous Units (11/90)

264.600 Applicability

The requirements in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as 264.1 provide otherwise.

264.601 Environmental performance standards

A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Applications for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions must include those requirements of subparts I through O and subparts AA through CC of this Part, Part 270, and 40 CFR part 63 subpart EEE, and 40 CFR part 146 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to: (9/01)

(a) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering: (12/93)

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;

(2) The hydrologic and geologic characteristics of the unit and the surrounding area;

(3) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater;

(4) The quantity and direction of groundwater flow;

(5) The proximity to and withdrawal rates of current and potential groundwater users;

(6) The patterns of land use in the region;

(7) The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food chain crops and other vegetation;

(8) The potential for health risks caused by human exposure to waste constituents; and

(9) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(b) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:

(1) The volume and physical and chemical characteristics of the waste in the unit;

(2) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;

(3) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

(4) The patterns of precipitation in the region;

(5) The quantity, quality, and direction of groundwater flow;

(6) The proximity of the unit to surface waters;

(7) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

(8) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;

(9) The patterns of land use in the region;

(10) The potential for health risks caused by human exposure to waste constituents; and

(11) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

(c) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;

(2) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

(3) The operating characteristics of the unit;

(4) The atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;

(5) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

(6) The potential for health risks caused by human exposure to waste constituents; and

(7) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

264.602 Monitoring, analysis, inspection, response, reporting, and corrective action

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with 264.601, 264.15, 264.33, 264.75, 264.76, 264.77, and 264.101 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit under these regulations. (12/92)

264.603 Postclosure care

A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with 264.601 during the postclosure care period. In addition, if a treatment or storage unit has contaminated soils or groundwater that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of 264.601 during postclosure care. The postclosure plan under 264.118 must specify

the procedures that will be used to satisfy this requirement.

Subparts Y-Z [Reserved]

Subpart AA - Air Emission Standards for Process Vents (12/92)

264.1030 Applicability

(a) The regulations in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in 264.1).

(b) Except for 264.1034, paragraphs (d) and (e), this subpart applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

(1) A unit that is subject to the permitting requirements of 270, or (9/98)

(2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 270, or (9/98)

(3) A unit that is exempt from permitting under the provisions of 262.34(a) (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 261.6. (9/98, 11/99)

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under 44-56-60 and RCRA section 3005 prior to December 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 124.15 or reviewed in accordance with the requirements of 270.50(d). Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 265 Subpart AA. (9/98, 11/99)

[Note: The requirements of 264.1032 through 264.1036 apply to process vents on hazardous waste recycling units previously exempt under 261.6(c)(1). Other exemptions under 261.4, and 264.1(g) are not affected by these requirements.] (8/00)

(d) Reserved (11/99)

(e) The requirements of this subpart do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this subpart are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part

61, or part 63 shall be kept with, or made readily available with, the facility operating record. (11/99)

264.1031 Definitions

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and parts 260 - 266.

Air stripping operation is a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Packed towers, spray towers, and bubblecap, sieve, or valvetype plate towers are among the process configurations used for contacting the air and a liquid.

Bottoms receiver means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.

Closed-vent system means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

Condenser means a heat transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Control device means an enclosed combustion device, vapor recovery system, or flare. Any device the primary function of which is the recovery or capture of solvents or other organics for use, reuse, or sale (e.g., a primary condenser on a solvent recovery unit) is not a control device.

Control device shutdown means the cessation of operation of a control device for any purpose.

Distillate receiver means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.

Distillation operation means an operation, either batch or continuous, separating one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Equipment means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this subpart. (8/00)

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device that indicates whether gas flow is present in a vent stream.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

Fractionation operation means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

Hazardous waste management unit shutdown means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit. An unscheduled work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit for less than 24 hours is not a hazardous waste management unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping operation are not hazardous waste management unit shutdowns.

Hot well means a container for collecting condensate as in a steam condenser serving a vacuum-jet or steam-jet ejector.

In gas/vapor service means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kiloPascals (kPa) at 20 EC, the total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 EC is equal to or greater than 20 percent by weight, and the fluid is a liquid at operating conditions. (12/93, 11/99)

In situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure that is at least 5 kPa below ambient pressure. (12/93)

Malfunction means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping. (8/00)

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

Process vent means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.

Repaired means that equipment is adjusted, or otherwise altered, to eliminate a leak.

Sampling connection system means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system. (8/00)

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Separator tank means a device used for separation of two immiscible liquids.

Solvent extraction operation means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.

Startup means the setting in operation of a hazardous waste management unit or control device for any purpose.

Steam stripping operation means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.

Surge control tank means a large sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.

Thin-film evaporation operation means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.

Vapor incinerator means any enclosed combustion device that is used for destroying organic compounds

264.1033 Standards: Closed-vent systems and control devices and does not extract energy in the form of steam or process heat.

Vented means discharged through an opening, typically an open-ended pipe or stack, allowing the passage of a stream of liquids, gases, or fumes into the atmosphere. The passage of liquids, gases, or fumes is caused by mechanical means such as compressors or vacuum-producing systems or by process-related means such as evaporation produced by heating and not caused by tank loading and unloading (working losses) or by natural means such as diurnal temperature changes.

264.1032 Standards: Process vents

(a) The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw shall either:

(1) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or

(2) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

(b) If the owner or operator installs a closed-vent system and control device to comply with the provisions of paragraph (a) of this section the closed-vent system and control device must meet the requirements of 264.1033.

(c) Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of 264.1034(c).

(d) When an owner or operator and the Department do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the procedures in 264.1034(c) shall be used to resolve the disagreement.

264.1033 Standards: Closed-vent systems and control devices

(a) (1) Owners or operators of closed-vent systems and control devices used to comply with provisions of this part shall comply with the provisions of this section.

(2)(i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the provisions of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be

installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup. (9/01)

(ii) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply. (11/99)

(iii) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility. (11/99)

(iv) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997, due to an action other than those described in paragraph (a)(2)(iii) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply). (11/99)

(b) A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of 264.1032(a)(1) for all affected process vents can be attained at an efficiency less than 95 weight percent.

(c) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 EC. If a boiler or process heater is used as the control device,

264.1033 Standards: Closed-vent systems and control devices
then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(d) (1) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (e)(1) of this section, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) A flare shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f)(2)(iii) of this section.

(3) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (e)(2) of this section.

(4) (i) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (e)(3) of this section, less than 18.3 m/s (60 ft/s), except as provided in paragraphs (d)(4) (ii) and (iii) of this section.

(ii) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in paragraph (e)(3) of this section, equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in paragraph (e)(3) of this section, less than the velocity, V_{max} , as determined by the method specified in paragraph (e)(4) of this section and less than 122 m/s (400 ft/s) is allowed.

(5) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in paragraph (e)(5) of this section.

(6) A flare used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(e) (1) Reference Method 22 in 40 CFR part 60 shall be used to determine the compliance of a flare with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left[\sum_{i=1}^n C_i H_i \right]$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 EC and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 EC;

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20 EC;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR part 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in 260.11); and

H_i = Net heat of combustion of sample component i , kcal/9 mol at 25 EC and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (incorporated by reference as specified in 260.11) if published values are not available or cannot be calculated.

(3) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(4) The maximum allowed velocity in m/s, V_{max} , for a flare complying with paragraph (d)(4)(iii) of this section shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8) / 31.7$$

where:

28.8 = Constant,

31.7 = Constant,

H_T = The net heating value as determined in paragraph (e)(2) of this section.

(5) The maximum allowed velocity in m/s, V_{max} , for an air-assisted flare shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084 (H_T)$$

where:

8.706 = Constant,

0.7084 = Constant,

H_T = The net heating value as determined in paragraph (e)(2) of this section.

(f) The owner or operator shall monitor and inspect each control device required to comply with this section to ensure proper operation and maintenance of the control device by implementing the following requirements:

(1) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible

point to the control device inlet but before the point at which the vent streams are combined.

(2) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:

(i) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of " 1 percent of the temperature being monitored in EC or " 0.5 EC, whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.

(ii) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of " 1 percent of the temperature being monitored in EC or " 0.5 EC, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(iv) For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of " 1 percent of the temperature being monitored in EC or " 0.5 EC, whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.

(v) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

(vi) For a condenser, either:

(A) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser, or

(B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of " 1 percent of the temperature being monitored in degrees Celsius (EC) or " 0.5 EC, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side). (9/98)

(vii) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed bed carbon adsorber, either:

(A) A monitoring device equipped with a continuous recorder to measure the concentration

level of the organic compounds in the exhaust vent stream from the carbon bed, or

(B) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

(3) Inspect the readings from each monitoring device required by paragraphs (f)(1) and (2) of this section at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this section.

(g) An owner or operator using a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of 264.1035(b)(4)(iii)(F).

(h) An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:

(1) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule, and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of 264.1035(b)(4)(iii)(G), whichever is longer.

(2) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of 264.1035(b)(4)(iii)(G).

(i) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

(j) An owner or operator of an affected facility seeking to comply with the provisions of this part by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

(k) A closed-vent system shall meet either of the following design requirements: (9/98)

264.1033 Standards: Closed-vent systems and control devices

(1) A closed-vent systems shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in 264.1034(b) of this subpart, and by visual inspections; or

(2) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(l) The owner or operator shall monitor and inspect each closed-vent system required to comply with this section to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements: (9/98)

(1) Each closed-vent system that is used to comply with paragraph (k)(1) of this section shall be inspected and monitored in accordance with the following requirements:

(i) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this section. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in 264.1034(b) of this subpart to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

(ii) After initial leak detection monitoring required in paragraph (l)(1)(i) of this section, the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in 264.1034(b) of this subpart to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

(B) Closed-vent system components or connections other than those specified in paragraph (l)(1)(ii)(A) of this section shall be monitored annually and at other times as requested by the Department, except as provided for in paragraph (o) of this section, using the procedures specified in 264.1034(b) of this subpart to demonstrate that the components or connections operate with no detectable emissions.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (l)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in 264.1035 of this subpart.

(2) Each closed-vent system that is used to comply with paragraph (k)(2) of this section shall be inspected and monitored in accordance with the following requirements:

(i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

(ii) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (l)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in 264.1035 of this subpart.

(3) The owner or operator shall repair all detected defects as follows:

(i) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in paragraph (l)(3)(iii) of this section.

(ii) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(iii) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(iv) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in 264.1035 of this subpart.

(m) Closed-vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them. (9/98)

(n) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is

removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon: (9/98)

(1) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(i) The owner or operator of the unit has been issued a final permit under part 270 which implements the requirements of subpart X of this part; or

(ii) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of subparts AA and CC of either this part or of part 265; or

(iii) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.

(2) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(i) Has been issued a final permit under part 270 which implements the requirements of subpart O of this part; or

(ii) Has designed and operates the incinerator in accordance with the interim status requirements of part 265, subpart O.

(3) Burned in a boiler or industrial furnace for which the owner or operator either:

(i) Has been issued a final permit under part 270 which implements the requirements of part 266, subpart H; or

(ii) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of part 266, subpart H.

(o) Any components of a closed-vent system that are designated, as described in 264.1035(c)(9) of this subpart, as unsafe to monitor are exempt from the requirements of paragraph (l)(1)(ii)(B) of this section if: (9/98)

(1) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (l)(1)(ii)(B) of this section; and

(2) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in paragraph (l)(1)(ii)(B) of this section as frequently as practicable during safe-to-monitor times.

264.1034 Test methods and procedures

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) When a closed-vent system is tested for compliance with no detectable emissions, as required in 264.1033(l) of this subpart, the test shall comply with the following requirements: (11/99)

(1) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(2) The detection instrument shall meet the performance criteria of Reference Method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(4) Calibration gases shall be:

(i) Zero air (less than 10 ppm of hydrocarbon in air).

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(5) The background level shall be determined as set forth in Reference Method 21.

(6) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(c) Performance tests to determine compliance with 264.1032(a) and with the total organic compound concentration limit of 264.1033(c) shall comply with the following:

(1) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:

(i) Method 2 in 40 CFR part 60 for velocity and volumetric flow rate.

(ii) Method 18 in 40 CFR part 60 for organic content.

(iii) Each performance test shall consist of three separate runs; each run conducted for at least 1 hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a timeweighted basis.

(iv) Total organic mass flow rates shall be determined by the following equation:

$$E_h = Q_{sd} \left\{ \sum_{i=1}^n C_i M W_i \right\} [0.0416] [10^{-6}]$$

where:

E_h = Total organic mass flow rate, kg/h;
 Q_{sd} = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;
 n = Number of organic compounds in the vent gas;

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kgmol/m³ (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm, ppm⁻¹.

(v) The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h)(H)$$

where:

E_A = Total organic mass emission rate, kg/y;

E_h = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h

(vi) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (E_h as determined in paragraph (c)(1)(iv) of this section) and by summing the annual total organic mass emission rates (E_A , as determined in paragraph (c)(1)(v) of this section) for all affected process vents at the facility.

(2) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(3) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(i) Sampling ports adequate for the test methods specified in paragraph (c)(1) of this section.

(ii) Safe sampling platform(s).

(iii) Safe access to sampling platform(s).

(iv) Utilities for sampling and testing equipment.

(4) For the purpose of making compliance determinations, the timeweighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Department's approval, be determined using the average of the results of the two other runs.

(d) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping

operation is not subject to the requirements of this subpart, the owner or operator must make an initial determination that the timewighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:

(1) Direct measurement of the organic concentration of the waste using the following procedures:

(i) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

(ii) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

(iii) Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 (incorporated by reference under 260.11). (9/98)

(iv) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the timewighted, annual average total organic concentration of the waste. The timewighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

(2) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(e) The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with timewighted, annual average total organic

concentrations less than 10 ppmw shall be made as follows:

(1) By the effective date that the facility becomes subject to the provisions of this subpart or by the date when the waste is first managed in a waste management unit, whichever is later, and

(2) For continuously generated waste, annually, or

(3) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

(f) When an owner or operator and the Department do not agree on whether a distillation, fractionation, thin film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the procedures in Method 8260 of SW-846 (incorporated by reference under 260.11) may be used to resolve the dispute. (9/98, 11/99)

264.1035 Recordkeeping requirements

(a) (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one hazardous waste management unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(b) Owners and operators must record the following information in the facility operating record:

(1) For facilities that comply with the provisions of 264.1033(a)(2), an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this subpart.

(2) Up-to-date documentation of compliance with the process vent standards in 264.1032, including:

(i) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan).

(ii) Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using

operating parameter values (e.g., temperatures, flow rates, or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

(3) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:

(i) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

(ii) A detailed engineering description of the closed-vent system and control device including:

(A) Manufacturer's name and model number of control device.

(B) Type of control device.

(C) Dimensions of the control device.

(D) Capacity.

(E) Construction materials.

(iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(4) Documentation of compliance with 264.1033 shall include the following information:

(i) A list of all information references and sources used in preparing the documentation.

(ii) Records, including the dates, of each compliance test required by 264.1033(k).

(iii) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of APTI Course 415: Control of Gaseous Emissions (incorporated by reference as specified in 260.11) or other engineering texts acceptable to the Department that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with paragraphs (b)(4)(iii)(A) through (b)(4)(iii)(G) of this section may be used to comply with this requirement. The design analysis shall address the vent stream characteristics

and control device operation parameters as specified below.

(A) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.

(D) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in 264.1033(d).

(E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.

(F) For a carbon adsorption system such as a fixed bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(G) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon

replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(iv) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

(v) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit of 264.1032(a) is achieved at an efficiency less than 95 weight percent or the total organic emission limits of 264.1032(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

(vi) If performance tests are used to demonstrate compliance, all test results.

(c) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of this part shall be recorded and kept up-to-date in the facility operating record. The information shall include:

(1) Description and date of each modification that is made to the closed-vent system or control device design.

(2) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with 264.1033 (f)(1) and (f)(2).

(3) Monitoring, operating, and inspection information required by paragraphs (f) through (k) of 264.1033.

(4) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:

(i) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 second at a minimum temperature of 760EC, period when the combustion temperature is below 760EC. (6/04)

(ii) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 weight percent or greater, period when the combustion zone temperature is more than 28°C below the design average combustion zone temperature established as a requirement of paragraph (b)(4)(iii)(A) of this section. (6/04)

(iii) For a catalytic vapor incinerator, period when:

(A) Temperature of the vent stream at the catalyst bed inlet is more than 28EC below the average temperature of the inlet vent stream established as a requirement of paragraph (b)(4)(iii)(B) of this section, or

(B) Temperature difference across the catalyst bed is less than 80 percent of the design average temperature difference established as a requirement of paragraph (b)(4)(iii)(B) of this section.

(iv) For a boiler or process heater, period when:

(A) Flame zone temperature is more than 28EC below the design average flame zone temperature established as a requirement of paragraph (b)(4)(iii)(C) of this section, or

(B) Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of paragraph (b)(4)(iii)(C) of this section.

(v) For a flare, period when the pilot flame is not ignited.

(vi) For a condenser that complies with 264.1033(f)(2)(vi)(A), period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20 percent greater than the design outlet organic compound concentration level established as a requirement of paragraph (b)(4)(iii)(E) of this section.

(vii) For a condenser that complies with 264.1033(f)(2)(vi)(B), period when:

(A) Temperature of the exhaust vent stream from the condenser is more than 6EC above the design average exhaust vent stream temperature established as a requirement of paragraph (b)(4)(iii)(E) of this section; or

(B) Temperature of the coolant fluid exiting the condenser is more than 6EC above the design average coolant fluid temperature at the condenser outlet established as a requirement of paragraph (b)(4)(iii)(E) of this section.

(viii) For a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with 264.1033(f)(2)(vii)(A), period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20 percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of paragraph (b)(4)(iii)(F) of this section.

(ix) For a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with 264.1033(f)(2)(vii)(B), period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time

established as a requirement of paragraph (b)(4)(iii)(F) of this section.

(5) Explanation for each period recorded under paragraph (4) of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

(6) For a carbon adsorption system operated subject to requirements specified in 264.1033(g) or 264.1033(h)(2), date when existing carbon in the control device is replaced with fresh carbon.

(7) For a carbon adsorption system operated subject to requirements specified in 264.1033(h)(1), a log that records:

(i) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

(ii) Date when existing carbon in the control device is replaced with fresh carbon.

(8) Date of each control device startup and shutdown.

(9) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to 264.1033(o) of this subpart shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of 264.1033(o) of this subpart, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component. (9/98)

(10) When each leak is detected as specified in 264.1033(l) of this subpart, the following information shall be recorded: (9/98)

(i) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(ii) The date the leak was detected and the date of first attempt to repair the leak.

(iii) The date of successful repair of the leak.

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(A) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(d) Records of the monitoring, operating, and inspection information required by paragraphs (c)(3) through (c)(10) of this section shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record. (9/98)

(e) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Department will specify the appropriate recordkeeping requirements.

(f) Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in 264.1032 including supporting documentation as required by 264.1034(d)(2) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record.

264.1036 Reporting requirements

(a) A semiannual report shall be submitted by owners and operators subject to the requirements of this subpart to the Department by dates specified by the Department. The report shall include the following information:

(1) The Environmental Protection Agency identification number, name, and address of the facility. (12/93)

(2) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in 264.1035(c)(4) and as indicated by the control device monitoring required by 264.1033(f) and such exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in 264.1033(d) and as determined by Method 22 monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.

(b) If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in 264.1035(c)(4) for more than 24 hours or a flare does not operate with visible emissions as defined in 264.1033(d), a report to the Department is not required.

264.1037 - 264.1049 [Reserved]

Subpart BB - Air Emission Standards for Equipment Leaks (12/92)

264.1050 Applicability

(a) The regulations in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in 264.1).

(b) Except as provided in 264.1064(k), this subpart applies to equipment that contains or contacts hazardous

wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following: (9/98)

(1) A unit that is subject to the permitting requirements of part 270, or

(2) A unit (including a hazardous waste recycling unit that is not exempt from permitting under the provisions of 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of part 270, or

(3) A unit that is exempt from permitting under the provisions of 262.34(a) (i.e., a "90-day" tank or container) and is not a recycling unit under the provisions of 261.6. (11/99)

(c) For the owner or operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to December 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 124.15 or reviewed in accordance with the requirements of 270.50(d). Until such date when the owner or operator receives a final permit incorporating the requirements of this subpart, the owner or operator is subject to the requirements of part 265, subpart BB. (11/99)

(d) Each piece of equipment to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

(e) Equipment that is in vacuum service is excluded from the requirements of 264.1052 to 264.1060 if it is identified as required in 264.1064(g)(5).

(f) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of 264.1052 through 264.1060 of this subpart if it is identified as required in 264.1064(g)(6) of this subpart. (9/98, 11/99)

(g) [Reserved] (9/98; 8/00)

[Note: The requirements of 264.1052 through 264.1065 apply to equipment associated with hazardous waste recycling units previously exempt under 261.6(c)(1). Other exemptions under 261.4, , and 264.1(g) are not affected by these requirements.] (9/98)

264.1051 Definitions

As used in this subpart, all terms shall have the meaning given them in 264.1031, the Act, and parts 260 - 266.

264.1052 Standards: Pumps in light liquid service

(a) (1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 264.1063(b), except as provided in paragraphs (d), (e), and (f) of this section.

264.1052 Standards: Pumps in light liquid service

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b) (1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 264.1059.

(2) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system must be:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or

(ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of 264.1060, or

(iii) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

(2) The barrier fluid system must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

(3) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5) (i) Each sensor as described in paragraph (d)(3) of this section must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.

(ii) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6) (i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii) of this section, a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 264.1059.

(iii) A first attempt at repair (e.g., relapping the seal) shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in 264.1064(g)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump meets the following requirements:

(1) Must have no externally actuated shaft penetrating the pump housing.

(2) Must operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in 264.1063(c).

(3) Must be tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times as requested by the Department.

(f) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of 264.1060, it is exempt from the requirements of paragraphs (a) through (e) of this section.

264.1053 Standards: Compressors

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or

(2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of 264.1060, or (12/93)

(3) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

(c) The barrier fluid must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

(d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e) (1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.

(2) The owner or operator shall determine, based on design considerations and operating experience, a

264.1054 Standards: Pressure relief devices in gas/vapor service criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 264.1059.

(2) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of 264.1060, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in 264.1064(g)(2), for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in 264.1063(c).

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times as requested by the Department.

264.1054 Standards: Pressure relief devices in gas/vapor service

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in 264.1063(c).

(b) (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 264.1059.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in 264.1063(c).

(c) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in 264.1060 is exempt from the requirements of paragraphs (a) and (b) of this section.

264.1055 Standards: Sampling connecting systems

(a) Each sampling connection system shall be equipped with a closed purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured. (9/98)

(b) Each closed purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall meet one of the following requirements: (9/98)

(1) Return the purged process fluid directly to the process line;

(2) Collect and recycle the purged process fluid; or

(3) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of 264.1084 through 264.1086 of this subpart or a control device that complies with the requirements of 264.1060 of this subpart.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section. (9/98)

264.1056 Standards: Open-ended valves or lines

(a) (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

264.1057 Standards: Valves in gas/vapor service or in light liquid service

(a) Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in 264.1063(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, and 264.1061 and 264.1062.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) (1) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months,

(d) (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 264.1059.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts.

(2) Replacement of bonnet bolts.

(3) Tightening of packing gland nuts.

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in 264.1064(g)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) of this section if the valve:

(1) Has no external actuating mechanism in contact with the hazardous waste stream.

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in 264.1063(c).

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times as requested by the Department.

(g) Any valve that is designated, as described in 264.1064(h)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section.

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in 264.1064(h)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

264.1058 Standards: Pumps and valves in heavy

liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors

(a) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 264.1063(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 264.1059.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under 264.1057(e).

(e) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of paragraph (a) of this section and from the recordkeeping requirements of 264.1064 of this subpart. (9/98)

264.1059 Standards: Delay of repair

(a) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10 percent by weight.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 264.1060.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before

264.1060 Standards: Closedvent systems and control devices
the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.

264.1060 Standards: Closedvent systems and control devices

(a) Owners and operators of closed-vent systems and control devices subject to this subpart shall comply with the provisions of 264.1033 of this part. (11/99)

(b) (1) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the provisions of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup. (11/99)

(2) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply. (11/99)

(3) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award or contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility. (11/99)

(4) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997, due to an action other than those described in paragraph (b)(3) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes

subject to this subpart; the 30-month implementation schedule does not apply). (11/99)

264.1061 Alternative standards for valves in gas/vapor service or in light liquid service: percentage of valves allowed to leak

(a) An owner or operator subject to the requirements of 264.1057 may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than 2 percent of the valves to leak.

(b) The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing 2 percent of valves to leak:

(1) An owner or operator must notify the Department that the owner or operator has elected to comply with the requirements of this section.

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Department.

(3) If a valve leak is detected, it shall be repaired in accordance with 264.1057(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves subject to the requirements in 264.1057 within the hazardous waste management unit shall be monitored within 1 week by the methods specified in 264.1063(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves subject to the requirements in 264.1057 for which leaks are detected by the total number of valves subject to the requirements in 264.1057 within the hazardous waste management unit.

(d) If an owner or operator decides to comply with this section no longer, the owner or operator must notify the Department in writing that the work practice standard described in 264.1057(a) through (e) will be followed.

264.1062 Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair

(a) (1) An owner or operator subject to the requirements of 264.1057 may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in paragraphs (b) (2) and (3) of this section.

(2) An owner or operator must notify the Department before implementing one of the alternative work practices.

(b) (1) An owner or operator shall comply with the requirements for valves, as described in 264.1057,

except as described in paragraphs (b)(2) and (b)(3) of this section.

(2) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in 264.1057 of this subpart (11/99).

(3) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in 264.1057 of this subpart. (11/99)

(4) If the percentage of valves leaking is greater than 2 percent, the owner or operator shall monitor monthly in compliance with the requirements in 264.1057, but may again elect to use this section after meeting the requirements of 264.1057(c)(1).

264.1063 Test methods and procedures

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) Leak detection monitoring, as required in 264.1052 - 264.1062, shall comply with the following requirements:

(1) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(2) The detection instrument shall meet the performance criteria of Reference Method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(4) Calibration gases shall be:

(i) Zero air (less than 10 ppm of hydrocarbon in air).

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(5) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(c) When equipment is tested for compliance with no detectable emissions, as required in 264.1052(e), 264.1053(i), 264.1054, and 264.1057(f), the test shall comply with the following requirements:

(1) The requirements of paragraphs (b)(1) through (4) of this section shall apply.

(2) The background level shall be determined as set forth in Reference Method 21.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) In accordance with the waste analysis plan required by 264.13(b), an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10 percent by weight using the following:

(1) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (incorporated by reference under 260.11);

(2) Method 9060 or 8260 of SW-846 (incorporated by reference under 260.11); or (9/98)

(3) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10 percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(e) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the determination can be revised only after following the procedures in paragraph (d)(1) or (d)(2) of this section.

(f) When an owner or operator and the Department do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in paragraph (d)(1) or (d)(2) of this section can be used to resolve the dispute.

(g) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

(h) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86 (incorporated by reference under 260.11).

(i) Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of 264.1034(c)(1) through (c)(4).

264.1064 Recordkeeping requirements

(a) (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one hazardous waste management unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(b) Owners and operators must record the following information in the facility operating record:

(1) For each piece of equipment to which subpart BB of part 264 applies:

(i) Equipment identification number and hazardous waste management unit identification.

(ii) Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).

(iii) Type of equipment (e.g., a pump or pipeline valve).

(iv) Percent by weight total organics in the hazardous waste stream at the equipment.

(v) Hazardous waste state at the equipment (e.g., gas/vapor or liquid).

(vi) Method of compliance with the standard (e.g., monthly leak detection and repair or equipped with dual mechanical seals).

(2) For facilities that comply with the provisions of 264.1033(a)(2), an implementation schedule as specified in 264.1033(a)(2).

(3) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in 264.1035(b)(3).

(4) Documentation of compliance with 264.1060, including the detailed design documentation or performance test results specified in 264.1035(b)(4).

(c) When each leak is detected as specified in 264.1052, 264.1053, 264.1057, and 264.1058, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with 264.1058(a), and the date the leak was detected, shall be attached to the leaking equipment.

(2) The identification on equipment, except on a valve, may be removed after it has been repaired.

(3) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 264.1057(c) and no leak has been detected during those 2 months.

(d) When each leak is detected as specified in 264.1052, 264.1053, 264.1057, and 264.1058, the

following information shall be recorded in an inspection log and shall be kept in the facility operating record:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date evidence of a potential leak was found in accordance with 264.1058(a).

(3) The date the leak was detected and the dates of each attempt to repair the leak.

(4) Repair methods applied in each attempt to repair the leak.

(5) Above 10,000 if the maximum instrument reading measured by the methods specified in 264.1063(b) after each repair attempt is equal to or greater than 10,000 ppm.

(6) Repair delayed and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(7) Documentation supporting the delay of repair of a valve in compliance with 264.1059(c).

(8) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

(9) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(10) The date of successful repair of the leak.

(e) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of 264.1060 shall be recorded and kept up to date in the facility operating record as specified in 264.1035(c). Design documentation is specified in 264.1035 (c)(1) and (c)(2) and monitoring, operating, and inspection information in 264.1035(c)(3)-(c)(8).

(f) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Department will specify the appropriate recordkeeping requirements.

(g) The following information pertaining to all equipment subject to the requirements in 264.1052 through 264.1060 shall be recorded in a log that is kept in the facility operating record:

(1) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of 264.1052(e), 264.1053(i), and 264.1057(f).

(ii) The designation of this equipment as subject to the requirements of 264.1052(e), 264.1053(i), or 264.1057(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with 264.1054(a).

(4)(i) The dates of each compliance test required in 264.1052(e), 264.1053(i), 264.1054, and 264.1057(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year. (9/98, 11/99)

(h) The following information pertaining to all valves subject to the requirements of 264.1057 (g) and (h) shall be recorded in a log that is kept in the facility operating record:

(1) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

(2) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

(i) The following information shall be recorded in the facility operating record for valves complying with 264.1062:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(j) The following information shall be recorded in a log that is kept in the facility operating record:

(1) Criteria required in 264.1052(d)(5)(ii) and 264.1053(e)(2) and an explanation of the design criteria.

(2) Any changes to these criteria and the reasons for the changes.

(k) The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability section of this subpart and other specific subparts:

(1) An analysis determining the design capacity of the hazardous waste management unit.

(2) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in 264.1052 through 264.1060 and an analysis determining whether these hazardous wastes are heavy liquids.

(3) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in 264.1052 through 264.1060. The record shall include supporting documentation as required by 264.1063(d)(3) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total

organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in 264.1052 through 264.1060, then a new determination is required.

(l) Records of the equipment leak information required by paragraph (d) of this section and the operating information required by paragraph (e) of this section need be kept only 3 years.

(m) The owner or operator of a facility with equipment that is subject to this subpart and to regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this subpart either by documentation pursuant to 264.1064 of this subpart, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record. (11/99)

264.1065 Reporting requirements

(a) A semiannual report shall be submitted by owners and operators subject to the requirements of this subpart to the Department by dates specified by the Department. The report shall include the following information:

(1) The Environmental Protection Agency identification number, name, and address of the facility. (12/93)

(2) For each month during the semiannual reporting period:

(i) The equipment identification number of each valve for which a leak was not repaired as required in 264.1057(d).

(ii) The equipment identification number of each pump for which a leak was not repaired as required in 264.1052 (c) and (d)(6).

(iii) The equipment identification number of each compressor for which a leak was not repaired as required in 264.1053(g).

(3) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

(4) For each month during the semiannual reporting period, dates when the control device installed as required by 264.1052, 264.1053, 264.1054, or 264.1055 exceeded or operated outside of the design specifications as defined in 264.1064(e) and as indicated by the control device monitoring required by 264.1060 and was not corrected within 24 hours, the duration and cause of each exceedance, and any corrective measures taken.

(b) If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in 264.1057 (d), 264.1052 (c) and (d)(6), and 264.1053 (g), respectively, and the control device does not exceed or operate outside of the design

specifications as defined in 264.1064(e) for more than 24 hours, a report to the Department is not required.

264.1066 - 264.1079 [Reserved]

Subpart CC - Air Emission Standards for Tanks, Surface Impoundments, and Containers (9/98)

264.1080 Applicability

(a) The requirements of this subpart apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either subparts I, J, or K of this part except as 264.1 and paragraph (b) of this section provide otherwise.

(b) The requirements of this subpart do not apply to the following waste management units at the facility:

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996. (11/99)

(2) A container that has a design capacity less than or equal to 0.1 m³.

(3) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(4) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar Federal or State authorities. (8/00)

(6) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.

(7) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of 264.1084(i), except as provided in 264.1082(c)(5).

(8) A tank that has a process vent as defined in 264.1031.

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under